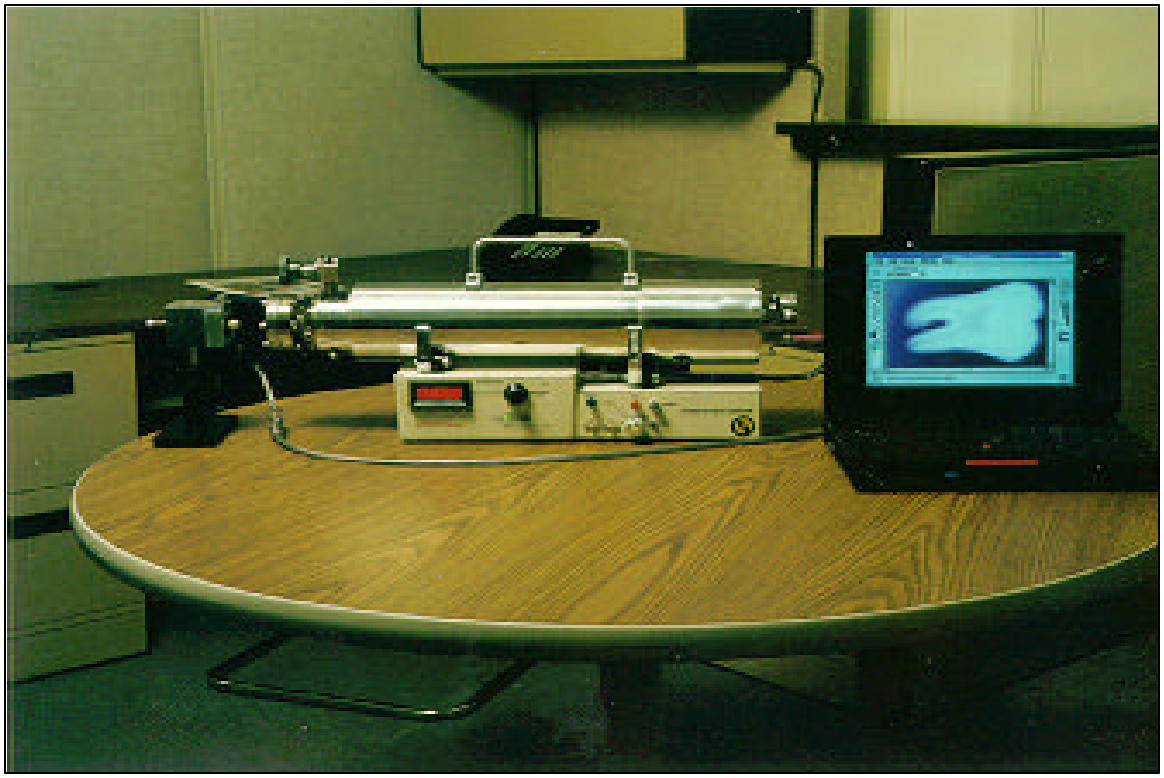
PORTABLE PULSED X-RAY SOURCE



The Naval Research Laboratory has developed an intense pulsed x-ray source based on an efficient Marx generator and a novel field emission x-ray tube. The compact, portable configuration allows medical and dental radiography and non-destructive examinations to be performed in remote locations and confined spaces using self-contained battery power. The short pulse duration allows flash radiography of moving objects without immobilization.

Features and advantages include:

- High intensity: >3 rad/cm^2 at the tube window and exposure repeatability within 5%.
- Short pulse duration: 50 nanosecond pulse width eliminates integrated noise in CCD arrays and allows high-speed radiography.
- Portable: internal, rechargeable battery supplies >150 pulses; weighs <12 kg; 56 cm in length.

Applications include:

- Mobile medical and dental x-ray imaging services
- Medical x-ray of possible fractures with minimum movement of the injured person
- Imaging of small animals without anesthesia (due to high-speed capabilities)
- In situ testing of x-ray detectors and CCD imaging arrays
- On-site examination of archeological artifacts or other fragile art or historical objects

Licenses are available to companies with commercial interest.

Points of Contact
Naval Research Laboratory
4555 Overlook Avenue, SW, Washington, DC 20375-5320
http://techtransfer.nrl.navy.mil

Jane F. Kuhl • Head, Technology Transfer Office • (202) 767-3083 • kuhl@utopia.nrl.navy.mil
Dr. John F. Seely • Space Sciences Division • (202) 767-3529 • john.seely@nrl.navy.mil